

**University of Stuttgart** *IER* Institute of Energy Economics and Rational Energy Use Federal Ministry of Education and Research



# Course content for UrGe4Hy: GAMS & VEDA Installation

Hardware & Software recommendations:

*Veda2.0 works on <u>Windows</u> portables, desktops, servers, and VMs, with Windows 8/Windows server 2012 or above. Microsoft Excel is a prerequisite.* 

- CPU: Minimum 4 cores are recommended for STANDARD and ADVANCED licenses. 8 16 would be desirable for larger models
- RAM: 4-8 GB is enough for Veda, but GAMS needs more RAM for larger models. 32 GB would accommodate most models
- HDD: 500GB 1TB free space for Veda and GAMS files

Installations involved:

- 1. GAMS (General Algebraic Modeling System)
- 2. VEDA2.0 (VErsatile Data Analyst)

### 1. GAMS:

- 1. Download respective GAMS release for your PC (Win- 64/32 bit) from: https://www.gams.com/download/
- 2. Run the downloaded Setup from the Windows Explorer
  - a. Check "Use advanced installation mode" at the bottom of the GAMS setup form
  - b. Let GAMS be installed into the default folder (\GAMS \<Win#>\<ver>)

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#### c. Use recommended GAMS Studio installation

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🖬 Setup - GAMS		_		$\times$
File Association of GAMS Files Choose a program to be associated with GAM	S and GDX files (.gm	ns, .gdx)		$\mathbf{r}$
In addition to GAMS Studio this distribution in GAMS(.gms) and GDX(.gdx) files be associate IDE?	ncludes the deprecate ed with GAMS Studio	ed GAMS ID or with the	E. Should GAMS	
Use GAMS Studio		Reco	mmended	
O Use GAMS IDE		D	eprecated	
Note, that this choice only affects the default f used to open .gms and .gdx files manually.	file type association.	Both progra	ms can be	
The GAMS IDE will be dropped with an upcor the GAMS IDE cannot be maintained any long	ning release. Due to Jer.	its old softw	are stack	
[	Back	Next	Cance	: <b> </b>

d. Verify and add GAMS directory PATH environment variable.

🖬 Setup - GAMS		_		$\times$
Advanced Options Select advanced options				$\sim$
Add GAMS directory to PATH environment	variable (re	quires reboot	or log out)	)
Create a desktop icon for GAMS IDE				
✓ Create a desktop icon for GAMS Studio				
	Back	Next	C	ancel

e. Select "Use Demo License"

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	Setup - GAMS	_	
	GAMS License Choose a license to be used		
	GAMS License Options: Use Demo License Browse for license file License from dipboard License from User Documents directory License from previous GAMS installation (User) License from previous GAMS installation (System) Demo license selected		
	Write License to System Directory (C:\GAMS\47)		
	Back	Next	Cancel

- 3. Restart your PC
- 4. Check installation:
  - a. Open command prompt (Win+r -> "cmd")
  - b. Type "gams" to see of it is recognised

C:\Users\ac141827>gams
Job ? Start 07/02/24 17:56:47 40.4.0 d540b52e WEX-WEI x86 64bit/MS Windows
***
*** GAMS Base Module 40.4.0 d540b52e Oct 3, 2022 WEI x86 64bit/MS Window
***
*** GATS Development Corporation
*** +1 202-342-0180 +1 202-342-0181 fax
*** support@gams.com
***
*** GAMS Release : 40.4.0 d540b52e WEX-WEI x86 64bit/MS Windows
*** Release Date : Oct 3, 2022
*** To use this release, you must have a valid license file for
*** this platform with maintenance expiration date later than
*** Aug 01, 2022
***
*** License : C:\Users\ac141827\Documents\GAMS\gamslice.txt
*** Medium MUD - 10 User License S220311/0002AO-WIN
*** University of Stuttgart, IER
*** DC848 01M5COGEPTCPXPDI
*** License Admin: laura.torralba-diaz@ier.uni-stuttgart.de
NAN
*** Licensed platform : xoo S2010 HS Windows S2 and 04010
*** Maintenance expiration date (GAMS base module): Apr 05, 2023
*** Note: For solvers, other expiration dates may apply.
*** Run gamslib model licememo for more details.
*** Status: Normal completion
Job ? Stop 07/02/24 17:56:47 elapsed 0:00:00.006
C: USers \ac141827>

c. Type "path" to check if the installation directory is present in it



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C:\Users\ac141827Ppath PATH=C:\UINDOWS\System32;C:\WINDOWS\C:\\UINDOWS\System32\Weem;C:\WINDOWS\System32\UeenS2\UeenS34\;<u>C:\GAMS\40;C:\GAMS\40\gbin;</u>C:\Users\ac141827\AppD ata\Loca\\Microsoft\WindowsApps;C:\Users\ac141827\AppData\Loca\\GitHubDesktop\bin;C:\Users\ac141827\AppData\Loca\\Programs\Git\cmd; C:\Users\ac141827>

- d. If either of these [(b) or (c)] do not appear, follow the steps:
  - i. Supposing your installation directory is: C:\GAMS\32
  - ii. Search/open "system environment variables" (Right click on My Computer/This PC -> Properties -> Advanced System Settings)
  - iii. Go to "Advanced" tab, click on "Environment Variables"

System Propertie	15				×
Computer Name	Hardware	Advanced	System Protection	Remote	
You must be log Performance	gged on as a	an Administra	tor to make most of t	hese change	s.
Visual effects,	processor s	cheduling, m	emory usage, and vir	tual memory	
				Settings	
User Profiles					
Desktop settin	igs related to	o your sign-in			
				Settings	
Startup and Re System startup	ecovery o, system fail	lure, and deb	ugging information		
				Settings	
			Environme	ent Variables.	
		ок	Cancel	Арр	ly

iv. Click on the "Path" and "Edit"

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Envi	ironment Variables				×
5	Variable	Value			
	OneDrive	C:\Users\RavinderSir	nghChauhan\OneDri	ve	
	Path	C:\Users\RavinderSir	nghChauhan\AppDa	ta\Local\Micr	osoft\Windo
	TEMP	C:\Users\RavinderSir	nghChauhan\AppDa	ta\Local\Temp	p
	TMP	C:\Users\RavinderSir	nghChauhan\AppDa	ta\Local\Temp	p .
-5	ystem variables		New	Edit	Delete
	Variable	Value			
	ComSpec	C:\WINDOWS\syster	m32\cmd.exe		
	DriverData	C:\Windows\System	32\Drivers\DriverDat	а	
	NUMBER_OF_PROCESSORS	8			18 A
	05	Windows NT			
	Path	C:\WINDOWS\syster	m32;C:\WINDOWS;C	WINDOWS	system32\Wb
	PATHEXT PROCESSOR ARCHITECTURE	.COM;.EXE;.BAT;.CM AMD64	D;.VBS;.VBE;.JS;.JSE;.V	VSF;.WSH;.MS	,c
			New	Edit	Delete
			Г	ОК	Cancel

v. Click on "New" and add the GAMS directory path (C:\GAMS\32) to the list

Edit environment variable	×
%SystemRoot%\system32	New
%SystemRoot%	
%SystemRoot%\System32\Wbem	Edit
%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\	
%SYSTEMROOT%\System32\OpenSSH\	Browse
C:\Program Files\Microsoft SQL Server\130\Tools\Binn\	
C:\GAMS\32	Delete
C:\Program Files\Git\cmd	
C:\Program Files\nodejs\	
C:\Program Files\dotnet\	Move Up
C:\Program Files (x86)\dotnet\	
	Move Down
	_
	Edit text
	-
OK	Cancel

- vi. You may need to restart to see GAMS listed in the PATH in the CMD
- e. Open cmd, type "gams trnsport" to run a demo LP problem
  - i. Check if objective value matches 153.675

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Iteration Dual Objective In Variable 1 73.125000 x(seattle,new-york 2 119.025000 x(seattle,chicago 3 153.675000 x(san-diego,topeka 4 153.675000 x(san-diego,new-york LP status (1): optimal. Cplex Time: 0.02sec (det. 0.01 ticks)	Out Variable demand(new-york) slack demand(chicago) slack demand(topeka) slack supply(seattle) slack	
Optimal solution found Objective: 153.675000		
Reading solution for model transport Executing after solve: elapsed 0:00:00.131 trnsport.gms(66) 4 Mb		

## 2. VEDA2.0:

Two options of installation (1, recommended) Localhost, (2) executable setup.

[You need to download (<u>https://www.7-zip.org/download.html</u>) and install 7zip before for the unzipping of the VEDA file]

- 1. Local Host installation:
  - Download and install prerequisites from: <u>https://github.com/kanors-emr/Veda2.0-</u> Installation/tree/master/Localhost%20Version%20Prerequisites
  - Download Veda2.0 from: <u>https://github.com/kanors-emr/Veda2.0-</u> <u>Installation/releases/tag/v3.1.1.0</u> (Veda2.0\_localhost\_3.1.1.0.7z; ~72 MB)
  - Unzip the file and copy contents to C:\Veda2.0 (~1.5 GB)

Extract to:			
C:\Veda2.0			×
Veda2.0_localhost_3.1.1.0 (1) Path mode:		Password	
Full pathnames	~	Show Password	
Overwrite mode:		Restore file security	
Ask before overwrite	~		
	OK	Cancel	Help

Start the application from the unzipped folder (C:\Veda2.0\Veda2.0\_localhost\_2.7.1.1) -> Veda2.0.exe





#### Getting a trial license:

 Once you have Veda2.0 open, follow: "Help" -> "License operations" -> "Activate/Deactivate License"

Help				
Er	ror log			1
Li	cense operations		Activate/Deactivate License	ł
D	ocumentation		Show License Usage	I.
M	ligrating			ľ
Ta	ags processing order			
Tr	oubleshooting			
Fu	ull documentation			

## 2. Select "Get Trial Key"

LICENSE WIZAF	RD		$\otimes$
		Veda2.0	
	This wi	zard guides you through the steps required to activate your license.	
	۲	No license key was found on your system.	
		Activate your license Deactivate your license	
Loop 7			
Ranors	,հոյ (	Get Trial Key	Cancel

3. Follow the link and fill in the required details to get the trial license key through your email.

	University of Stuttgart IER Institute of Energy Economics and Rational Energy Use	UNIVERSIDAD DE LA REPÚBLICA URUGUAY
	Last Name	
	abc@xyz.com	
	Organization	
	Address (as you would need to see on the invoice)	
	City	
	Afghanistan	~
	Installing trial license key	Submit

4. After obtaining the key insert it through step (1) above and selecting "Activate your license", followed by "Activate Online".



5. Insert your obtained trial license key and select "Activate license key"



That's it, now you're ready to start using VEDA!

Post-installation bugs:

- Veda makes a local connection to a PostgreSQL database. In case you see "No database response" message on Veda startup and it does not go away, please make sure that the system firewall is not blocking Veda in making the said connection (This could require permissions from your IT department).
- Veda uses Excel in background and in case of any pending popups in Excel that require user attention, Excel will not work which in turn will stop Veda to carry out important processes like synchronization of model. One such popup is the user sign-in popup, so we advise user to make sure they are signed in to Excel properly.

All useful links:

- <u>https://veda-</u> <u>documentation.readthedocs.io/en/latest/pages/Getting%20started.html#installation</u>
  https://github.com/kanors-emr/Veda2.0-Installation
- <u>https://veda-</u> <u>documentation.readthedocs.io/en/latest/pages/License%20operations.html</u>